



Energy+Environmental Economics

# Technical Potential for Local Distributed PV in California

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# Technical Potential for “Local” Distributed PV

- + “Local” = Output consumed by load on feeder or substation**
  - Easier interconnection
- + Evaluated a range of interconnection criteria; for example:**
  - 15% of peak load (Rule 21)
  - No backflow (hourly evaluation of load and output)
- + Constrained by available land and rooftops**
- + Calculated total cost and total net cost (net of avoided costs)**



# Variations on Analysis

**+ Three procurement scenarios:** least cost; least net cost; high roofs

**+ Two cost cases**

- High Cost: 2010 PV costs; \$7.50 MWh integration cost; high interconnection costs; no distribution avoided costs
- Low Cost: Historical learning curve cost decline; no integration cost; low interconnection costs; include distribution avoided cost

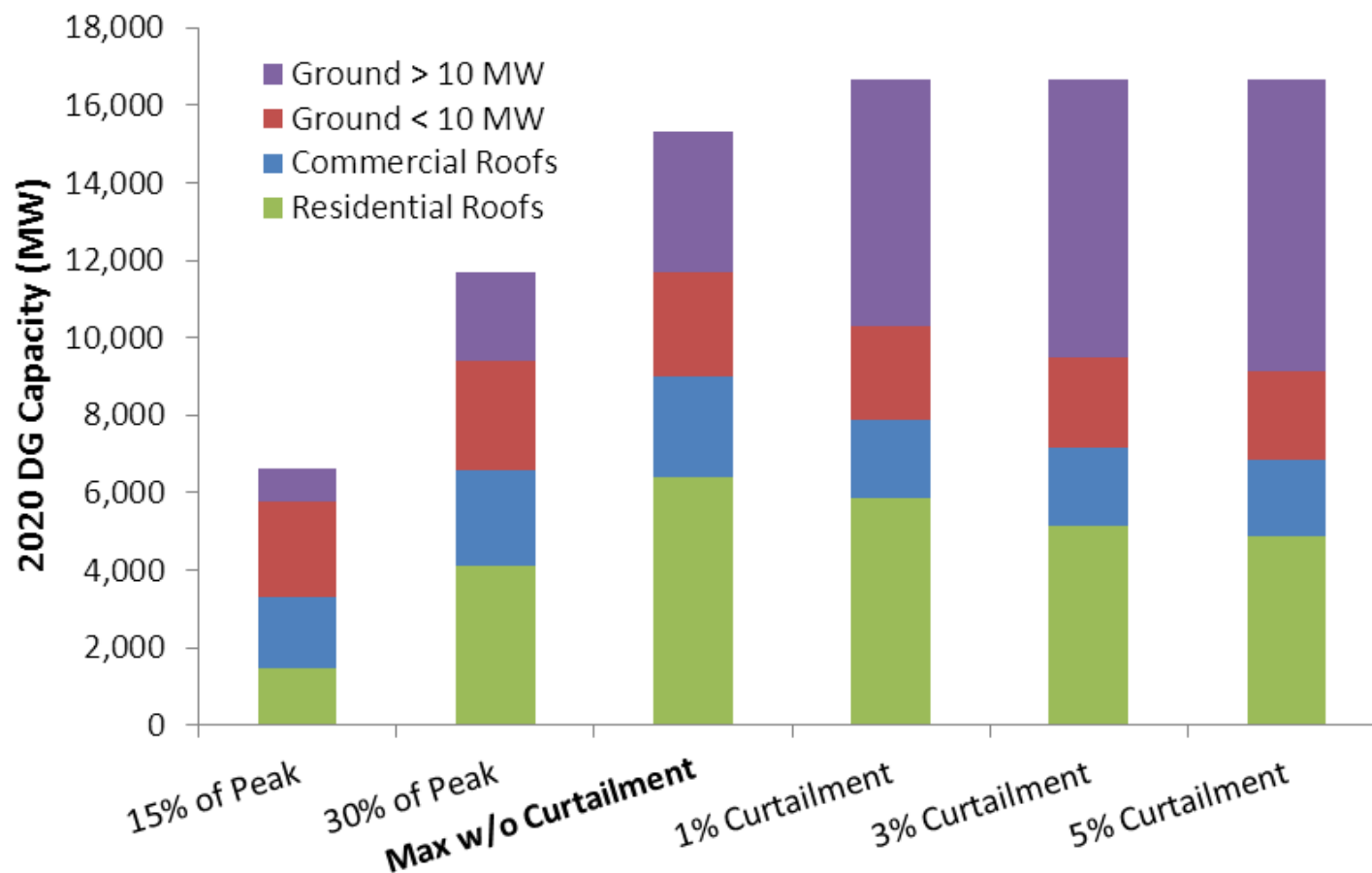
**+ Sensitivities**

- Interconnection Criteria: 15% peak; 30% peak; max without curtailment; 1%, 3%, 5% curtailment
- Installation Rate: High-9GW by 2016; Base-5GW by 2016; Low-<4GW by 2016



# Key Results

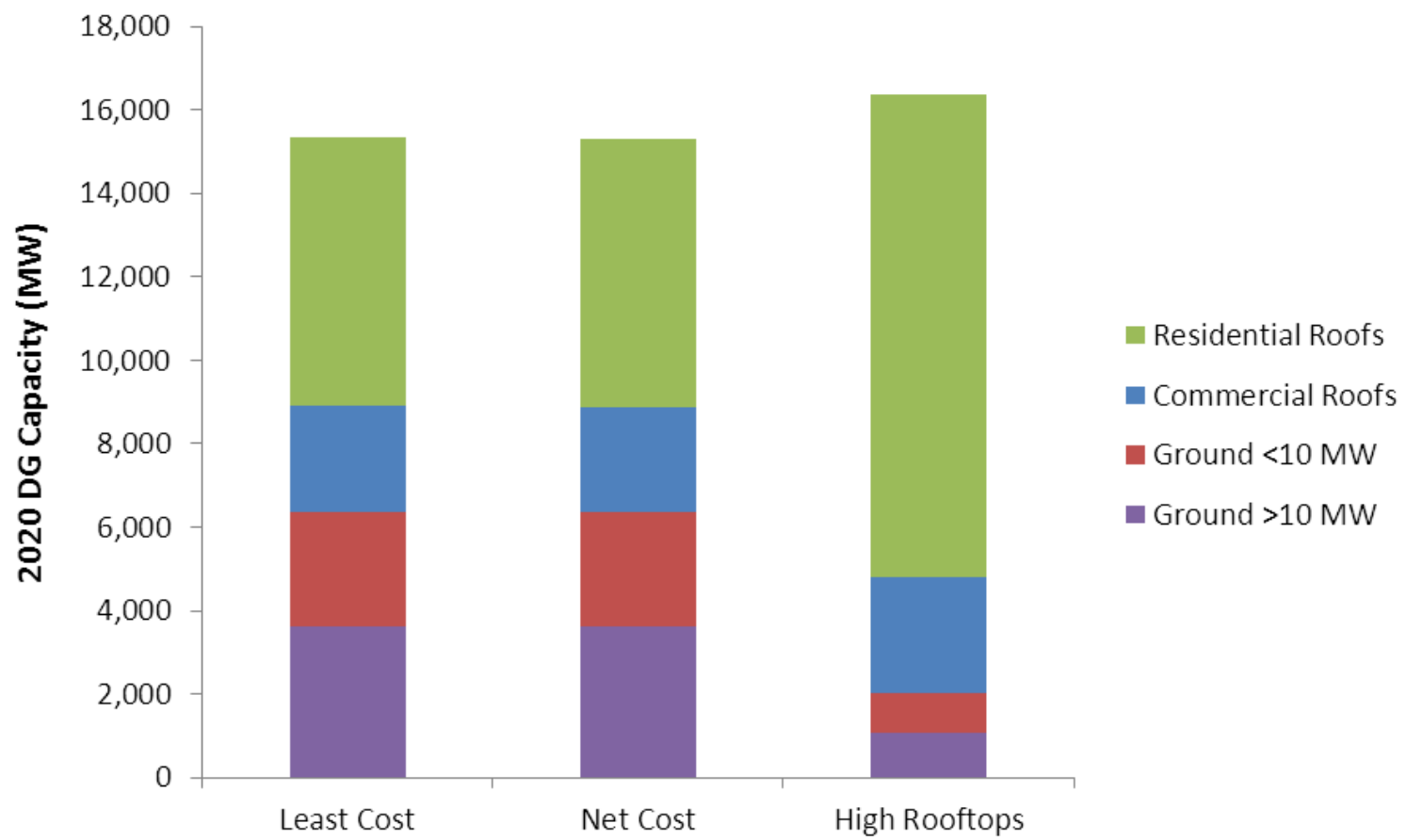
## Technical Capacity Estimate Under Various Interconnection Constraints





## Key Results

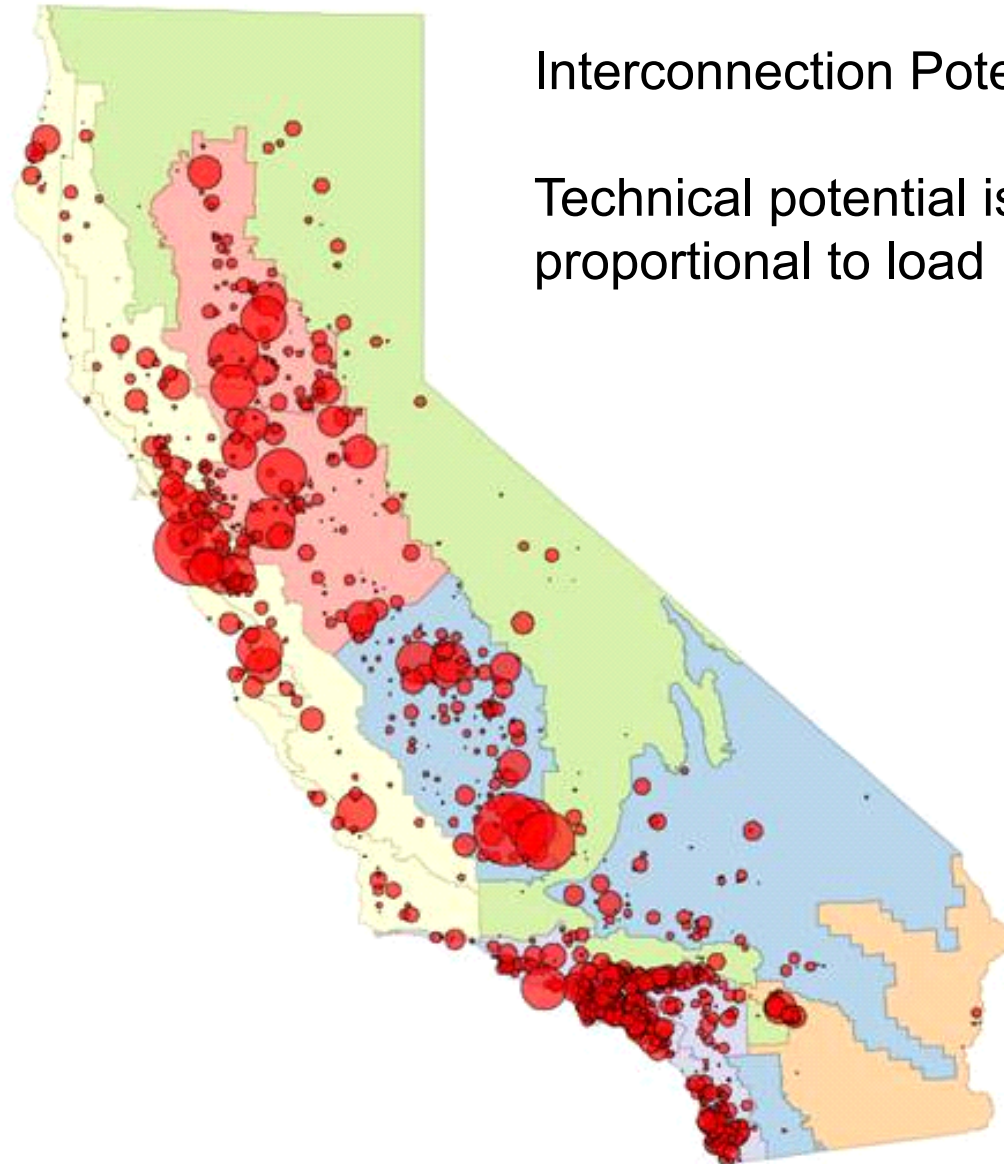
Portfolio Resource Mix in 2020, Under a “Maximum PV Without Curtailment” Constraint







## Key Results



Interconnection Potential by Location

Technical potential is roughly proportional to load